

SHORT NEWS

1. STARFISH

Recently, scientists have found *Vibrio pectenica* bacteria behind a wasting disease known as Sea Star Wasting Disease (SSWD) that's killed over 5 billion starfish since 2013 along North America's Pacific coast.

Sea Star Wasting Disease (SSWD)

A fatal condition affecting various starfish (sea star) species, causing lesions, limb loss, tissue disintegration, and eventual death. Symptoms include Lesions on the body, tissue decay, twisting of arms, loss of limbs, and eventual disintegration of the body. Causes are recently identified as *Vibrio pectenica* bacteria, overturning earlier assumptions of a viral cause.

Mechanism

The bacterium produces enzymes that digest the starfish's tissue, leading to rapid body collapse. *Enzymes are biological catalysts—specialized proteins (or sometimes RNA) that speed up chemical reactions in living organisms without being consumed in the process.* The infection spreads quickly and is often fatal within days. The disease affects multiple starfish species, but sunflower starfish have been among the hardest hit.

Sunflower Starfish (*Pycnopodia helianthoides*)

Size & Speed, One of the largest and fastest sea stars in the world.

Habitat, Coastal waters of the Pacific Ocean, from Alaska to Baja California.

1. Found on diverse substrates — mud, sand, gravel, boulders, and rock.
2. From intertidal coastal waters to 435 m, but mostly within 120 m.

Appearance, can grow up to 1 metre (3 feet) across and have up to 24 arms.

Ecological Role

1. Top predator of sea urchins, helping maintain kelp forest health.
2. Their decline has caused urchin populations to explode, leading to the destruction of kelp habitats.
3. Conservation Status, Listed as Critically Endangered under the International Union for Conservation of Nature (IUCN).

2. FIRST-EVER NICKEL–COPPER–PLATINUM GROUP SULPHIDE DISCOVERY IN INDIA

Recently, the Deccan Gold Mines Ltd. (DGML) announced the first-ever Nickel–Copper–Platinum Group Element (Ni–Cu–PGE) sulphide mineralization in India, located in the Bhalukona–Jamnidi block, Mahasamund district, Chhattisgarh.

Nickel–Copper–Platinum Group Element (Ni–Cu–PGE)

A type of mineral deposit containing nickel (Ni), copper (Cu), and platinum group elements (PGEs) in sulphide form, usually found in mafic–ultramafic rocks.

Platinum Group Elements (PGEs)

Six rare metals — Platinum (Pt), Palladium (Pd), Rhodium (Rh), Ruthenium (Ru), Osmium (Os), and Iridium (Ir) — often occurring together and associated with nickel and copper deposits.

Major Global Sources, Large Ni–Cu–PGE deposits are mined in South Africa, Russia, and Canada.

Applications of Ni–Cu–PGE

1. Nickel

1. Used in stainless steel and high-strength alloys.
2. Key in Electric Vehicles (EV) batteries (lithium–nickel–manganese–cobalt types).
3. Important for aerospace alloys and electroplating.

2. Copper

1. Crucial for electrical wiring, motors, electronics, and renewable energy systems.
2. Used in plumbing and heat exchangers.

3. PGEs

Essential for catalytic converters (vehicle emission control).

Strategic Importance

Ni–Cu–PGE deposits are vital for high-tech industries, clean energy transition, and critical mineral security, with growing demand from EV and renewable energy sectors.

3.ASIA'S LONGEST FREIGHT TRAIN 'RUDRASTRA'

Recently, the Indian Railways has achieved a new milestone by successfully conducting a trial run of Asia's longest freight train, named 'Rudrastra'.

Rudrastra

It is Asia's longest freight train by Indian Railways, formed by coupling six BOXN rakes to haul bulk goods in a single run. BOXN (Bogies Open High Sided with Air Brakes) (N – Improved Design) rakes are broad-gauge open wagons used by Indian Railways mainly for carrying bulk commodities such as coal, iron ore, limestone, and other minerals.

1. Length: About 4.5 km
2. Composition: 7 locomotives, 354 wagons formed by coupling six empty BOXN rakes.
3. Distance Coverage: 200 km in 5 hours, average speed 40 km/h.
4. Route: Journey began on the Dedicated Freight Corridor from Ganjkhawaja, UP to Sonnagar, Jharkhand, then continued on Indian Railways' regular track.
5. Purpose: Primarily to transport coal and other bulk commodities efficiently.

Significance

1. Demonstrates Indian Railways' ability in heavy-haul operations and departmental coordination.
2. Opens the way for faster, larger-scale freight movement, freeing up space for more trains and reducing congestion.
3. Saves time, manpower, and operational costs by avoiding separate runs for six rakes.
4. Improves freight capacity and track utilisation.
5. Boosts India's logistics efficiency and supports energy supply chains.

4.Pradhan Mantri Ujjwala Yojana

Recently, the Union Cabinet has approved the continuation of the targeted LPG subsidy under Pradhan Mantri Ujjwala Yojana (PMUY) for FY 2025–26 with a financial outlay of ₹12,000 crore. It is a flagship scheme of the Ministry of Petroleum and Natural Gas (MOPNG) launched in May 2016.

Objective

Provide free LPG connections to women from below-poverty-line (BPL) households to promote clean cooking fuel and reduce indoor air pollution.

Eligibility

1. Adult woman from a poor household with no LPG connection, belonging to:
2. Socio Economic and Caste Census (SECC) 2011-identified poor households.
3. SC/ST households, PMAY beneficiaries, Antyodaya Anna Yojana (AAY) families, Forest dwellers, Most Backward Classes (MBC), Tea & Ex-Tea Garden Tribes, River island residents.
4. If not in above lists, can apply by submitting 14-point self-declaration proving poor household status.
5. Exclusion: Male members cannot apply.

Targeted Subsidy

Subsidy: ₹300 per LPG cylinder (up to 12 cylinders/year) for PMUY beneficiaries to ensure affordability and sustained usage of LPG. Mode through Direct Benefit Transfer (DBT) to beneficiary's bank account.

Significance

1. Reduces dependence on biomass fuels, improving health outcomes, especially for women and children.
2. Supports energy access and environmental sustainability goals.
3. Complements SDG 7 (Affordable and Clean Energy) and SDG 3 (Good Health and Well-being).

5. Tuvalu

Tuvalu, a small Pacific Island nation, is preparing for the world's first planned migration of an entire country due to rising sea levels. As per multiple studies, much of Tuvalu's land could be underwater within 25 years.

Tuvalu

The former name as Ellice Islands. It is a Polynesian country in the west-central Pacific Ocean, composed of 9 small coral islands. It is geographically positioned both in the Southern and Eastern hemispheres of the Earth. It is Midway between Hawaii and Australia, in the west-central Pacific Ocean. It is situated to the east-northeast of Santa Cruz Islands, to the northeast of Vanuatu, to the southeast of Nauru to the south of Kiribati, to the west of Tokelau, to the northwest of Wallis and Futuna and Samoa and to the north of Fiji. The de facto capital is Vaiaku, on Funafuti Atoll. Key Islands include Nanumanga Niutao and Niulakita. Tuvalu is a member of the Pacific Islands Forum. It comprises 9 islands (4 reef islands & 5 coral atolls). Low-lying No point higher than 4.5 m above sea level and no rivers. Climate Hot and rainy. The Population is ~11,000 (2nd smallest independent nation after Vatican City).

Economy

1. Subsistence farming and fishing.
2. Remittances from overseas workers.
3. Copra exports, stamp sales, and fishing licenses bring modest revenue.

Politics

1. Independence: 1978 from the UK.
2. System: Parliamentary democracy under a constitutional monarchy.

Vulnerability

Average elevation 2 m above sea level, threatened by flooding, storm surges, and sea level rise.

Data

1. Sea levels in Tuvalu in 2023 were 15 cm higher than 30 years ago (NASA).
2. 2 of 9 coral atolls are already mostly submerged.
3. The country could be uninhabitable within 80 years; major land loss by 2050.

Falepili Union Treaty (2023)

In response to this crisis, Tuvalu and Australia signed the Falepili Union Treaty in 2023. This agreement is a groundbreaking program that allows for the controlled and dignified migration of Tuvaluans to Australia.

1. Provision: Climate migration pathway.
2. Quota: 280 Tuvaluans/year will get permanent residency in Australia.
3. Rights: Access to health care, education, housing, and jobs.
4. Goal: Allow Tuvaluans to migrate "with dignity" as climate impacts worsen.
5. First Phase: In June–July 2025, about 8,750 registrations; first 280 migrants selected by ballot on 25 July 2025.
6. Long-term Projection: Up to 4% of the population per year could migrate → ~40% within a decade.

6.Kartavya Bhavan

First of 10 planned Common Central Secretariat (CCS) buildings under the Central Vista redevelopment project. Designed as a modern, green HQ to house major central ministries and improve governance efficiency.

Key Features

Size, 150,000 sq. m, 7 floors + 2 basements.

Green tech

1. Rooftop solar panels (534,000 units/year)
2. Rainwater harvesting, zero-discharge waste processing
3. Energy-efficient HVAC, noise-insulated glass, sensor-controlled lighting

Digital & Security

1. Smart ID access, CCTV, digital workspaces
2. Centralised command centre
3. GRIHA-4 sustainability rating target

Significance

1.Governance efficiency

Centralises ministries, ends decades of administrative sprawl.

2.Economic

Projected savings of ₹1,500 crore/year in rent & maintenance once all 10 CCS buildings are functional (by 2027).